

REMARKS

This is in response to the official action of May 7, 2003.

To simplify the issues and expedite examination of this case, claims 15, 34, and 43 have been amended to incorporate previous claims 21-22, 40-41 and 49-50. It is respectfully submitted that this constitutes a rewriting of claims 21-22, 40-41 and 49-50 and not a narrowing thereof. Claims 21-22, 40-41 and 49-50 have been cancelled as superfluous over claims 15, 34 and 43.

Claims 15-18, 20, 33-37, 39, 42-46, 48 and 51 stand rejected as anticipated under 35 USC 102(b) by US Patent No. 5,186,974 to **Gribbin**. It is respectfully submitted that this rejection is now moot for the reasons set forth above, and respectfully submitted that this rejection may now be withdrawn.

Claims 19, 38 and 47 stand rejected as obvious under 35 USC 103(a) over **Gribbin** in view of US Patent No. 4,902,538 to Piacenti. It is respectfully submitted that this rejection is now moot for the reasons set forth above, and respectfully submitted that this rejection may now be withdrawn.

Claims 21-22, 40-41, and 49 stand rejected as obvious over **Gribbin** in view of U.S. Patent No. 5,009,367 to Nielsen. For the reasons set forth below, this rejection is respectfully traversed.

Persons of ordinary skill in the art would not combine **Gribbin** with **Nielsen** because Gribbin is directed to an air spray system (or gas system) while Nielsen is directed to using an airless system.

Further, persons of ordinary skill in the art would not be lead to utilize Gribbin in carrying out the present invention, because Gribbin is concerned with manufacturing a film. Advantageously, the methods of the present invention do not form a surface coating or film on the surface of a civil infrastructure when they are applied thereto. Instead, they penetrate into the

pores of the material, so that the coating is incorporated into the material and the material retains a more natural appearance.

In its Background section, Nielsen describes three types of orifice sprays typically used in the coatings industry: air spray, airless spray, and air-assisted airless spray. (Nielsen, col. 1, lines 32-34). Nielsen states that air spray uses compressed air to break up the liquid coating formulation into droplets (i.e., form an aerosol) and to propel the droplets to the substrate. (Nielsen, col. 1, lines 35-37). Nielsen describes airless spray as using a high-pressure drop across an orifice to propel the coating formulation through the orifice at high velocity. (Nielsen, col. 1, lines 47-48). Nielsen describes air-assisted airless spray as combining features of air spray and airless spray, stating that "[i]t uses both compressed air and high pressure drop across the orifice to atomize the coating formulation and to shape the liquid spray, typically under milder conditions than each type of atomization is generated by itself." (Nielsen, col. 1, lines 60-65).

Gribbin appears to propose the use of an air spray system. Specifically, Gribbin proposes forming a coating on a substrate layer "by the simultaneous action of an electric corona discharge in the presence of an aerosol containing film-forming agents." (Gribbin, col. 2, lines 64-67). Gribbin proposes the use of carbon dioxide as a carrier gas for forming the aerosol of an aqueous solution of a bifunctional fluoropolyether. "The aerosols can be produced with the aid of known two-material atomizing nozzles or preferably by means of piezoelectric ultrasonic atomizing systems." Gribbin, col. 3, lines 18-20).

When discussing its inventive concepts, Nielsen proposes the use of an airless spray system. Specifically, Nielsen proposes utilizing an "airless spray nozzle tip to produce a given spray width and provide an actual spray width which is substantially greater than that rated" for the airless spray tip nozzle. (Nielsen, col. 3, lines 34-36). Nielsen achieves this greater spray width by mixing supercritical carbon dioxide with a typical, conventional coating formulation or coating composition.

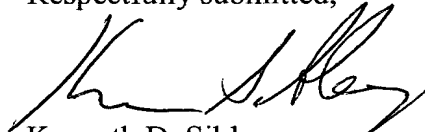
Finally, if one were to combine Gribbin with Nielsen, the resulting composition would include carbon dioxide as a carrier fluid and an aqueous solution of a bifunctional fluoropolyether. The inclusion of the aqueous solution would be detrimental to achieving the result sought in the currently claimed invention:, impregnating civil infrastructure materials with

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a protective polymer, rather than forming a visible film coating thereon. Hence, it is respectfully submitted that the cited combination of references in fact teaches away from the instant invention.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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